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LABORATORY BULLETIN

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STATE DOCUMENTS

MONTANA STATE DEPARTMENT OF HEALTH
HELENA, MONTANA



No. 20 - August 29, 1969

CONTINUING EDUCATION

We must depend upon professional persons in laboratories to advise practitioners of medicine on diagnostic laboratory procedures. There sometimes is a lag in communications and I would urge you in the laboratories to redouble efforts to keep physicians fully aware of developments in your field. The Montana Medical Education Research Foundation, P. O. Box 2829, Great Falls 59401 is conducting six courses this year to help you maintain professional competence and be more able to provide meaningful consultation. If you did not receive an announcement, write to the above address requesting one. Next year Clinical Chemistry will probably be included also.

VIROLOGIC EXAMINATIONS

With this Bulletin we are enclosing two copies of a virological instruction sheet printed in 1964 which, with a few alterations, is still useful. Here are the changes:

1. At the end of the second paragraph add * THIS IS ESSENTIAL FOR SELECTION OF TESTS TO BE RUN AND INTERPRETATIONS OF RESULTS.
2. Only 5 ml. of blood is required because we are now using Microtiter techniques.
3. Serological tests are not available or practical for Coxsackie A, B, or ECHO viruses (see Bulletin No. 8).
4. Spinal fluid is not a source for isolation of Saint Louis or Western Equine encephalitis viruses. Enteroviruses may be recovered from spinal fluid.
5. We do not test for Newcastle disease virus.
6. The Hemagglutination-Inhibition test for Rubella (German measles) is now available in the State Laboratory.
7. All Rabies work is done in the Livestock Sanitary Board Diagnostic Laboratory at Montana State University in Bozeman.
8. Vesicle fluid or skin scrapings are best for Smallpox and Vaccinia. The serological tests are not readily available.

MYCOPLASMA PNEUMONIA - PRIMARY ATYPICAL PNEUMONIA DUE TO EATON'S AGENT

PPLO PNEUMONIA (pleuropneumonia-like organism)

Sporadically, cases of primary atypical pneumonia due to Mycoplasma pneumoniae occur in Montana. Often this agent causes a "smoldering" epidemic which lasts a year or longer and these may take place in 4-5 year cycles. A useful diagnostic test in the clinical laboratory is cold hemagglutination (Todd-Sanford Clinical Diagnosis by Laboratory Methods-pg. 891-W. B. Saunders Co., Phila. 1965). However, some cases never become cold-agglutinin positive so we have available a specific complement-fixation test using mycoplasma antigen. Acute and convalescent blood specimens as usually submitted for serology are required.

NOTES

1. Kits for submission of specimens for parasites and ova are available on request. Their use is essential for complete examination as they contain PVA fixative.
2. The viruses isolated so far during the current aseptic meningitis season have been ECHO 30 (Malmstrom Air Force Base) and Coxsackie A9 (Missoula).
3. About 85 per cent of women of child-bearing age in Montana are immune to German measles (Rubella). This has been determined by doing hemagglutination-inhibition tests on some pre-natal serology specimens.

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Montana State Board of Health

Helena, Montana

INSTRUCTIONS FOR THE COLLECTION OF SPECIMENS FOR VIROLOGIC EXAMINATIONS

General Requirements

Early collection of specimens: Acute-phase blood specimens and materials for virus isolation must be collected within the first few days of illness.

Clinical information: Specify date of onset, type of disease suspected and give abstract of major clinical findings. Testing may be delayed or precluded if insufficient information is given, e.g. "test for Coxsackie".*

Identification of specimens: Clearly label each specimen container with patient's name and date collected. Fill out laboratory transmittal form for each specimen.

Forms and containers: Please utilize viral request forms and specimen containers provided by the State Board of Health. These are available from the State Board of Health upon request.

Freezing required: Most specimens for virus isolation must be frozen immediately and be kept frozen. Refer to instructions below.

Collection and Shipment of Materials

Blood specimens for serologic tests

Blood is utilized for serologic tests; rarely for virus isolation. Whole, clotted blood rather than serum is preferred. Collect two specimens, 5 ml. as follows:

Acute-phase: As soon as possible after onset; not later than 7-10 days.

Convalescent-phase: Fourteen or more days after first specimen.

Do not freeze whole blood.

Specimens for virus isolation attempts

Stool specimens: As soon as possible after onset, (24-48 hours) obtain one specimen.

Quantity needed: 1-2 teaspoonsful. Ship in 1-ounce, screw-capped glass jar or metal ointment box. Do not use paperboard containers for shipment of stools as the specimen may become desiccated. Freezing is optional, but is recommended.

Spinal fluids: Collect 3-5 ml. in sterile screw-capped or rubber stoppered glass tube. Seal with adhesive tape. Freeze immediately and ship frozen.

Throat swabs: Swab throat thoroughly using two dry swabs. Break off swab tips into 5 ml. of bacterial broth in rubber-stoppered or screw-capped tube. Seal, freeze immediately and ship frozen.

Autopsy or biopsy specimens: Collect tissues from probable sites of pathology using a separate sterile instrument for each sample. Samples should be about $\frac{1}{2}$ x $\frac{1}{2}$ inch; place each specimen in a separate jar, label and freeze immediately. In cases of central nervous system involvement, submit samples of medulla, midbrain, temporal lobe cortex, and cervical and lumbar spinal cord. A 2-3 inch segment of descending colon tied off with contents should be included for the recovery of Enteroviruses. For influenza or other respiratory disease, include trachea, carina and lung. Heart muscle, liver and kidney are uncommon sources of virus but may be included if involvement is suspected.

Vesicular fluid and skin scrapings: From vesicular skin lesions, collect fluid in capillary tubes, place in a test tube, seal and freeze immediately. If fluid cannot be withdrawn, absorb exudate from lesions on cotton swab, drop swab into 2-3 ml. of buffered bacteriologic broth and freeze immediately.

(Please see reverse for specimens required for examination)

TYPES OF SPECIMENS NEEDED FOR LABORATORY
DIAGNOSIS OF VIRAL AND RICKETTSIAL INFECTIONS

DISEASE OR AGENT	TYPES OF SPECIMENS NEEDED					
	Paired Bloods	Stool	Throat Washing	Spinal Fluid	Vesicle Fluid or Skin Scraping	Autopsy Material
Cat scratch fever			No Test	Available		
Chickenpox (varicella)	a				a	x
Colorado Tick Fever	x					
Enterovirus infections						
Coxsackie A (herpangina, etc.)	~~---~~	x	x			x
Coxsackie B (pleurodynia aseptic meningitis, etc.)	~~---~~	x	opt.	opt.		x
ECHO (aseptic meningitis, exanthems, etc.)	~~---~~	x	opt.	opt.		x
Poliomyelitis	x	x	opt.	opt.		x
Encephalitis, aseptic meningitis (see also mumps, herpes simplex, and enteroviruses)						
Lymphocytic choriomeningitis	a			~~opt.~~		a
Saint Louis	x			~~opt.~~		x
Western Equine	x			~~opt.~~		x
Hepatitis, infectious or serum			No Test	Available		
Herpes simplex	x		opt.	a	x	x
Lymphogranuloma Venereum	x					
Mumps	x		a	a		x
~~Newcastle disease virus~~	~~---~~					
Respiratory diseases						
Adenovirus	x		a			x
Influenza A and B	x		a			x
Parainfluenza 1, 2, 3 (infant croup, pneumonia)	x		a			x
Pneumonia, viral or atypical	x		a			x
Q fever	x					x
Psittacosis	x					x
Rubella (German measles)	~~x~~		No Test	Available		
Rubeola (measles)	x		~~---~~			x
~~Rabies~~	~~---~~					~~---~~
Rickettsialpox	x					
Rocky Mountain spotted fever	x					
Smallpox	~~---~~				x	x
Typhus	x					x
Vaccinia	~~---~~				x	x

x = minimal specimen requirements for diagnostic tests which are regularly available, including autopsy specimens if a fatal case.

a = specimens required for special or additional examinations which may be performed when warranted by clinical or epidemiologic findings.

opt. = specimens not required, but which may be submitted, optionally, for supplemental virus isolation attempts.